

REMARKS

The Office has rejected claim 5 under 35 U.S.C. § 112 as being indefinite. Claims 1 and 6 were rejected under 35 U.S.C. § 102(b) as being anticipated by Cao (5,635,761), and claims 1-3 were rejected as being anticipated by Brown (5,428,506). Claims 7-8 were rejected under 35 U.S.C. § 103(a) over Cao in view of Klaser (4,870,746), and claims 1-3, 5-8, 17, 19 and 20 were rejected over Archambeault (6,418,031) in view of Ehman (6,021,050).

The 112 Rejection

Applicant has amended claim 5, changing the dependency from canceled claim 4 to pending claim 1.

The 102(b) Rejections - Claims 1 and 6 Under Cao

Cao does not show or suggest "a capacitive element in series with the loss element" that is connected between power and ground, as now required by these claims. Cao, in fact, could not show such a capacitive element, because doing so would render Cao's loss element – a high-value termination resistor – inoperative. These claims are therefore allowable over Cao.

The 102(b) Rejections - Claims 1-3 Under Brown

Brown does not show or suggest "a loss element ... connected electrically between the power layer and ground layer to suppress electrical noise caused by changes in current flow," as required by applicant's claims 1-3. Brown shows a lossy conductive material that is "affixed directly to the V_{cc} plane" (column 2, lines 40-41), with no insulative material between the lossy conductive material and the V_{cc} plane. Without any insulating material between the lossy material and the V_{cc} plane, no electrical path is formed, and thus no current flows, between this material and any other circuit element. This includes both (a) the capacitive element that is connected directly between the power and ground layers and (b) the ground layer itself (column 3, lines 13-15). Brown's lossy conductive material thus cannot serve "a loss element ... connected electrically

between the power layer and ground layer to suppress electrical noise caused by changes in current flow." Accordingly, claims 1-3 all are patentable over this reference.

The 103(a) Rejection - Claims 7 & 8 Over Cao in view of Klaser

Claims 7 and 8 include all of the limitations of amended claim 1, which was addressed above. Like Cao, Klaser fails to show or suggest "a capacitive element in series with the loss element," as required by these claims. Therefore, the Cao and Klaser references, even when combined, fail to show or suggest the elements of Applicant's claims 7 and 8.

The 103(a) Rejection - Claims 1-3, 5-8, 17, 19 and 20 over Archambeault and Ehman

With respect to the Archambeault patent, the Office continues in its failure to follow the principles of the law on obviousness – in particular the requirements that (a) the prior art suggest the desirability of modifications, (b) the prior art not teach away from the invention, and (c) the Office not engage in improper hindsight reconstruction of the claims using Applicant's specification as a guide.

The Office concedes that Archambeault "fails to explicitly disclose the location of the elements in the internal layer of the circuit board," as required by applicant. This concession admits to only a partial truth, however, for not only does Archambeault fail to disclose the placement of a lossy element in an internal layer, it teaches specifically that the accepted placement of such an element is on the outer surface of the printed circuit board (see, *e.g.*, column 1, lines 16-24). Archambeault gives no indication that the outer layer is anything but the optimal location. A person of ordinary skill in the art therefore would have received no motivation from Archambeault to seek an alternative location for the lossy element.

Furthermore, Archambeault teaches away from Applicant's structure. Archambeault teaches that the power and ground planes are divided into multiple regions, with different elements required for each region. Archambeault teaches also that the power and ground layers should be modified by having areas of conducting material removed to alter their resonant structure. These requirements evidence a complex design

in which the internal structure of the board is critical to its operation. Because of the complex nature of the board's internal structure and the unknown impact that changes to that structure might have, Archambeault would steer a person of ordinary skill away from an internal element like that claimed by Applicant.

The Ehman reference does nothing to overcome these teachings of Archambeault. Ehman teaches the placement of standard circuit components on internal layers of a PCB to conserve real estate and reduce cost. As Applicant has made clear in previous responses, these well-known space-saving techniques in no way suggest Applicant's technique of embedding a lossy element between the power and ground planes for the purpose of suppressing unwanted electrical noise in the PCB. There is simply nothing in Ehman that would lead a person of ordinary skill from the teachings of Archambeault to Applicant's invention.

CONCLUSION

None of the references cited, taken either alone or in combination, shows all of the elements of Applicant's claims. Therefore, all of the claims are allowable over these references. Applicant therefore asks the Office to reconsider this application and to allow all of the claims. Please apply any charges that might be due, excepting the issue fee but including fees for extensions of time, to deposit account 50-1673.

Respectfully,

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